Space Weather Forecast

Issued on Saturday, 12 November 2022 at 12:34 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

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Space Weather Forecast Headline: Chance of Moderate class flares (Minor-Moderate radio blackouts) throughout.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Solar activity has been Moderate, with one low level Moderate class flare from AR3141 observed at 12/00018 UTC. There are two other numbered regions on the visible disc, both smaller and weaker than AR3141.No Earth-directed Coronal Mass Ejections (CMEs) have been observed on available imagery

Solar Wind / Geomagnetic Activity: The solar wind started the period at Low levels becoming slightly elevated by around 11/2000 UTC with levels currently reaching around 470 km/s in recent hours.. Magnetic field strength has remained at mostly moderate levels throughout with the important north-south component at weak to moderate values. Geomagnetic activity was Quiet to Unsettled (Kp 1-3).

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) remained at background levels with no solar radiation storms observed.

Four-Day Space Weather Forecast Summary

Solar Activity: Solar activity is likely to be generally Low, with a chance of isolated Moderate flare activity. The most likely source of activity is from the largest and most complex sunspot region in the northwestern hemisphere.

Solar Wind / Geomagnetic Activity: No Earth-directed CMEs are currently forecast. Solar winds are slightly elevated and will probably return to slow-ambient levels over the next couple of days as weak effects from a coronal hole wane. On day 4 (15 November) a further enhancement is possible due to the effects of a couple of small coronal hole features that are near the meridian, as it progresses further westwards across the visible disc. Geomagnetic activity is expected to be Quiet to Unsettled, with a slight chance of Active intervals this most likely on day 4 (15 November).

Energetic Particles / Solar Radiation: The count rate of energetic particles (High energy protons) is forecast to persist at background levels with only a slight, but increasing, chance of solar radiation storms.

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Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	1	1	1	5
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	Yes	40	40	50	50
Very Active	R3 to R5 X	No	5	5	5	5

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	5	5	5	10
Very Active	≥ S3 *	No	1	1	1	1
* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)						

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